

quent bony adhesions in new sites, present insuperable obstacles to replacement of the articular surfaces.

Stimson, in his arthrotomy, made a single, instead of the usual bilateral incision—which latter procedure he announces he intends adopting in the future—divided the olecranon, separated adhesions, reduced the luxation, and then sutured the divided bones with silkworm gut. Owing to the strain exercised upon the olecranon by the tense triceps muscle, the elbow had to be fixed at an angle of 145 degrees, a position which doubtless determined the redisplacement.

Dr. Stimson concludes by stating his acceptance of the rules formulated by Albert for cases of old backward luxation of the elbow, viz., rupture or tenotomize adhesions in the elderly, and if reduction then fails, forcibly flex the elbow to a right angle, with or without fracture of the olecranon, and allow ankylosis to occur. In younger subjects divide subcutaneously all bands, and even the triceps, to avoid fracture of the olecranon; but if the bones cannot then be replaced, arthrotomy should be done by two lateral incisions. Finally, if everything fail, excise the joint.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

L. WEBSTER FOX, M.D.,

OPHTHALMIC SURGEON TO THE GERMANTOWN HOSPITAL, PHILADELPHIA.

OPHTHALMOPLÉGIA EXTERNA ACUTA.

In the *Edinburgh Medical Journal* for March Drs. BERRY and BRAMWELL report a case of ophthalmoplegia externa acuta in a child of two and a half years, probably due to a scrofulous lesion of the pons Varolii, with subsequent recovery. The authors admit that the exact nature of the lesion must, to some extent, be a matter of conjecture, but were disposed to think that it was probably tubercular from the sudden nature of the attack and the clinical history of the case. The ocular symptoms manifested themselves as follows: Almost complete ptosis of both lids, inability to elevate the eyes, complete loss of the power of depressing them; the internal rectus of the right eye was absolutely, and that of the left almost completely, paralyzed; absolute divergence of the eyeballs, the pupils from four to five mm. in diameter, which contracted promptly to light. There were no visible changes of the fundus oculi. Dr. Berry's diagnosis was paralysis of the third and fourth nerves and paresis of the sixth—i. e., almost complete ophthalmoplegia externa.

By careful examination, no loss of sensation or derangement of motion could be elicited other than could be accounted for by the general apathetic and drowsy condition of the patient. The authors localized the lesion at the top of the pons Varolii and in the neighborhood of the aqueduct of Sylvius, from the fact that the muscles supplied by the third, fourth, and sixth nerves on both sides were involved and vision unaffected. The prompt pupillary

reaction demonstrated that it was not the trunk of the third nerve but only those nuclei connected with the external muscles of the eyeball which were implicated. The fifth nerve was apparently unaffected.

The authors bring to their support the researches in the localization of the motor functions of the eye by Henson and Völckers, Kahler, Pick, and Ferrier. The labors of Henson and Völckers have established the fact of a differentiation of centres of the third pair of nerves, so that each of the ocular muscles, the levator, the superior, inferior, and internal recti, and the inferior oblique, has a distinct and localized nuclear origin beneath the floor of the aqueduct of Sylvius; moreover, the centres for the reflexes of light and accommodation (the iris and ciliary muscle are not only distinct from the preceding but from each other) are placed further forward toward the summit of the third ventricle. From these anatomical differences of origin we can understand how there may be ophthalmoplegia externa whilst the pupillary and ciliary reflexes are perfectly normal; and also how the reflex to light may be abolished with conservation of the accommodative reflex as in the "Argyll-Robertson pupil."

The differential diagnosis between ophthalmoplegia of nuclear origin and that arising from peripheral lesion depends on the following symptoms: In the first instance there is a slow, gradual, and progressive suppression of ocular motility, with a moderate degree of ptosis that may be temporarily overcome by the will, and with normal pupillary and accommodation reflexes. In paralysis of peripheral origin, the failure of function is monolateral, sudden, subject to no changes or intermissions, and if existing, the ptosis is not controllable by the will. This latter phenomenon finds its explanation in the clinical and physiological fact that the levator is the only one of the ocular muscles whose relations with the cortex have been established.

The patient recovered under the internal administration of the iodide of potassium.

IMPERFECT CONVERGENCE IN EXOPHTHALMIC GOITRE.

P. J. MÖBIUS (*Centralblatt für Nervenheilkunde*) finds a subnormal converging power in patients with Basedow's disease, the remarkable fact being that the imperfection is independent of the proptosis, since in two cases when the proptosis was marked, convergence was normal, and in the other six cases, varying greatly in the degree of proptosis, the imperfect convergence was decided. The author concludes that the phenomenon is due to the nervous debility, and cites Perinaud, who found a reduced power of convergence in neurasthenic patients.

SYPHILITIC ARTERITIS OF A RETINAL ARTERY.

In the *Correspondenz-blatt für Schweizer Aerzte*, HAAB reports a case believed to be unique, of pronounced arteritis of one of the branches of the retinal artery, due to syphilis. The trunk of the artery showed spots of brilliant whiteness, often resembling white scales, whilst in the smaller subdivisions of the branches the change was shown throughout. These lesions were markedly lessened by constitutional treatment directed against the general syphilitic condition.

PHYSIOLOGICAL ACTION OF ATROPIA ON THE IRIS.

DR. H. HÖLTZKE in *Klinische Monatsblätter* for March, asserts that mydriasis of the pupil following instillations of atropia, is caused by paralysis of the nerve endings of the oculomotorius only. His statement is based upon experiments made upon lower animals, where the pupil had been dilated by atropia and the sympathetic nerve severed; the pupil immediately after the operation contracted; by the application of faradization dilatation follows. Contraction and dilatation of the pupil have been observed in a non-atropinized eye, where the same experiment has been made.

Stilling advances the argument that atropine not only paralyzes the nerve endings of the oculomotorius, but also irritates the sympathetic, and brings to his support the fact that in paralysis of the third nerve, due to some lesion, where we have a certain amount of pupillary dilatation (about five mm.), an application of atropia will dilate the pupil still further (8 mm.). He argues that the atropia irritates the sympathetic, thereby producing secondary mydriasis.

Höltzke explains this as follows: Inasmuch as the lesion is along the trunk of the nerve, there still remains a certain amount of force in the ganglion cells situated in the iris or anterior portion of the uveal tract or ciliary ganglion, which gives a certain amount of remnant tonicity to the peripheral ending of the nerve, it being these cells which the atropia affects, and thereby producing the secondary dilatation. Cocaine produces mydriasis of the pupil by its irritant effect upon the sympathetic, hence the secondary dilatation in an atropinized eye. Our author sets forth this fact in support to his primal assertion that atropia only acts physiologically upon the third nerve when applied to the eye.

SNOW-BLINDNESS.

DR. L. B. GRADDY, of Omaha, Neb., had under observation six patients suffering from snow-blindness. They were hunters, following their occupation in a district covered with snow. The intense glare of the sun reflecting from the snow produced the visual defect. The first manifestation of disturbed vision was their inability to outline game (wild geese) below the horizon. The visual defect increased to such a degree that landmarks which guide men on the plains, faded rapidly away, and it was with difficulty that they found their way into camp. Forty-eight hours after the attack, the victims were found by Dr. Graddy suffering intensely with photophobia, lachrymation, conjunctivitis, ciliary neuralgia and, in two cases, complicated by a narrow, horizontal band of superficial keratitis. The patients described their condition as if enveloped in a white, heavy mist. As their faces were sunburned, Dr. Graddy assumes that the pathological condition of the conjunctiva and cornea was of the same character, and the blindness due to molecular change in the retina, caused by over-stimulation.

The treatment instituted was soothing external applications and dark rooms. Recovery followed, with useful vision.

Indians and trappers have an ingenious way of protecting vision, where the glare is intense, by applying around the eyes, and over the cheeks, a gunpowder paste, or goggles made of the untanned skin of animals, fitting closely around the orbit.

MYOPIA IN THE SCHOOLS OF STOCKHOLM.

In an examination of 1446 school children of Stockholm, PROFESSOR JÖHAN NIDMARK found no myopia in children of six or seven years of age, whilst among scholars of eight and nine there was, among girls, but one case; among boys 14 per cent.; at sixteen, 33 per cent. of boys and girls were myopic, with an average of -2.5 D. In the highest grades the proportion of myopes among the girls rose as high as 54.28 per cent., with an average degree of -3.5 D., the frequency among boys not being so great, one school (girls) showed a frequency of 66.67 per cent., and a mean of -4.16 D. The statistics show that the injury is greater to the eyes of girls, a result to be expected, both on account of the comparative weakness of females, and the nature of their work outside of school.

SILVER BALLS AS SUBSTITUTES FOR THE VITREOUS AFTER EVISCERATION.

In the report of the Bristol General Hospital (*British Medical Journal*) two cases of the successful use of hollow silver (instead of glass) balls is detailed, for the substitution of artificial vitreous after evisceration, by MR. W. P. KEALL. The evisceration was thoroughly performed under antiseptic precautions. The ball was of a size easily enclosed by the sclerotic. The opening in the sclerotic was made just outside of the sclerocorneal margin in a horizontal and curved direction, whilst that of the conjunctiva was vertical, in order more effectually to close the hollow of the eye. The wounds were stitched with fine silk thread. The dressing was a pad of boracic lint moistened with carbolic lotion. No pain was experienced from the pressure of the balls, and in a few weeks all inflammation and discomfort had disappeared.

GOUTY AFFECTIONS OF THE EYE.

M. ZYCHAN (*Recueil d'Ophthalmologie*) describes the ocular symptoms consequent upon gout. The sclerotic is most frequently attacked, though the lachrymal ducts, the lids, and other parts are sometimes affected; vascular congestion and swelling are usually the most noticeable objective symptoms; calcareous deposits have been found under the conjunctiva of the upper lids near the margin, producing by the friction (as in trachoma) irritation of the conjunctiva of the globe, photophobia, etc. The deposits may be extracted or picked out with any sharp instrument. If dry eczematous scales form upon the lids, with intense itching, the author recommends dusting the parts with calomel or calomel and morphine combined. The capillary degeneration of gouty subjects is shown by conjunctival hemorrhages and extravasations.

TRANSPLANTATION OF RABBIT'S EYE INTO THE HUMAN ORBIT.

DR. CHARLES H. MAY reports the failure of an attempt of this kind in the *Archives of Ophthalmology* for March, 1887. The attempt is noticeable only because every circumstance attending the whole proceeding was as favorable to success as desired. The patient's health was all that could be wished, the operation was done with skill and care, and with every precaution, antiseptic and otherwise, that could be demanded; the subsequent events were all favor-

able to a successful result, but on the ninth day ulceration of the transplanted eye began to appear, and it was removed. The muscles and optic nerve had united more or less firmly, but the mass of foreign tissue proved too great; its nourishment was impossible under such circumstances.

ARTIFICIALLY PRODUCED CATARACT.

In *La Semaine Médicale*, MESSRS. BOUCHARD and CHARRIN state that naphthalin produces cataract of both eyes in rabbits; it requires three to four weeks, daily doses of about twenty-five grains, to produce this result.

In examining the functions of the cochlea, DR. STEIN found that the persistent action of a high-pitched tuning fork produced cataract in young porpoises in from eighteen to twenty-four hours. The opacity of the lens passed off in time, but could be reinduced by the tuning fork. In animals whose ears had been destroyed, the cataracts were producible in two or three hours.

A NEW CAUSE OF MYDRIASIS.

DR. RAMPOLDI (*Recueil d'Ophthalmologie*, March, 1887) calls attention to bronchial and pneumonic affections as frequent sources of unilateral (sometimes bilateral) mydriasis. He has noted the fact, especially after the patient has passed a sleepless night from cough, and explains the phenomenon as a result of irritation of the cervical sympathetic which supplies the radiating fibres of the iris.

CATARACT EXTRACTION WITHOUT IRIDECTOMY.

In the *Archives of Ophthalmology* for March, 1887, DR. H. KNAPP reviews the reasons for and against a preceding iridectomy in cataract extraction. His conclusion is: "Simple extraction is an operation of the highest order, and practicable in the majority of cases with the same degree of safety as the extraction combined with iridectomy. In a considerable minority, however, the latter method is preferable; in a number of cases the indications for the iridectomy manifest before, in others only during, the operation." He concludes that an iridectomy should be made when, from fluidity of the vitreous and rupture of the suspensory ligament, or from insufficient section, the vitreous, instead of the lens, presents; when the iris has been injured, when the sphincter is unyielding, when, subsequent to the expulsion of the lens, the iris proves irreducible.

Of the twenty-nine cases detailed which served as clinical proof of the results, there were eighteen "perfect or ideal recoveries"—i. e., the pupil was central and movable, and unobstructed by inflammatory products. The advantages of the operation without iridectomy are evident; there is a normal and active pupil, a natural appearance of the eye, increased acuteness and better eccentric vision, etc. On the other hand, the operation is somewhat more difficult, the section larger, the lens less easily expelled; there is greater danger of prolapse of the iris and posterior synechie.

IRRIGATION OF THE ANTERIOR CHAMBER AFTER CATARACT EXTRACTION.

In *Annales d'Oculistique* for January, 1887, DR. GRANDCLEMENT, of Lyon, reviews the method adopted, and the nature of the liquid used by MacKeown,

Wicherkiewicz, and Panas for irrigation of the anterior chamber after cataract extractions. Wicherkiewicz reduced the practice to a method for operations upon immature cataracts, instead of artificial maturation. Wecker made these injections, containing a solution of the salicylate of eserine, in order to secure pupillary contraction and to prevent prolapse of iris; Panas requiring not only cleansing, but also antiseptic properties.

Inasmuch as the usual antiseptics, such as the bichloride of mercury or phenic acid, were too irritating, he employed the biniodide of mercury (0.05 gramme to 1000 grammes, with 20 grammes alcohol, at 90°), which he found successful, patients usually recovering in seven days. Grandclement performed four cataract operations, following the details as suggested by Panas, excepting the strength of the solution, which was but half strength, for fear of producing too much irritation.

In the first case the solution was used thoroughly. The vision immediately following the irrigation was excellent, but in twenty-four hours, and still more marked on the second day, the cornea was striated and lacked transparency. The iris and capsular sac became involved and the final result was not brilliant.

The three cases following responded more favorably to the treatment. Our author found the intra-capsular irrigation, as practised with Panas' solution, dangerous, and according to experiments made upon rabbits by Drs. Betremieux and Vassaux, disciples of Panas, the salts of mercury should be abandoned. For operations upon immature cataracts our author now uses boiled and sterilized water, having abandoned all antiseptic liquids as dangerous and useless, there being no microbes in the eye; besides, the recent investigations and experiments of Prof. Sattler prove that Panas' solution is absolutely too weak to kill the numerous microbes which he found in the lachrymal sac and secretions of the conjunctiva of individuals suffering from catarrhal inflammation of the lachrymal ducts. To destroy the microbes a solution four times the strength would be required—much too irritating to apply to the eye. Boracic, salicylic acid, and other substances reputed antiseptic, Sattler found useless in the destruction of micrococci.

With patients having cataracts and suffering from catarrhal inflammation of the lachrymal canal, our author suggests the application of the sublimate, 20 centigrammes to 1000 grammes, for a shorter or longer time, to the palpebral aperture until a violent conjunctivitis is produced, this is then mastered by astringent washes, and the operation for cataract, or, what is still safer, a preliminary iridectomy performed. Five or six weeks subsequently the lens may be removed through the scar-tissue, which must be less favorable to the evolution of morbid germs. Our author has followed this method with good results, not depending upon boracic acid, which seems too much in vogue to-day. The reviewer has found boroglyceride, fifty per cent. solution, a most efficient remedy in cases as described above.

TRANSPLANTATION OF THE CORNEA.

In Zahender's *Klinische Monatsblätter* for February, 1887, PROF. ADIMUK reports his attempts at corneal transplantation into human eyes, emphasizing the recommendation that an adjacent portion of sclerotic be also transplanted.

This is in view of the fact that the cornea is nourished from its periphery, and that the sclerotic heals more rapidly than the cornea. It therefore became necessary to choose some animal having an eye small enough to enable the operator to procure a piece (by trephining) of the requisite tissues and size. Three attempts were made with rats' eyes; the tissues proved too thin and weak to withstand the intraocular pressure of the human eye. But there was union and healing of the transplanted part, and this gave encouragement to other attempts.

Five trials were made with hen's eyes. Two ulcerated, and three grew firmly in place, but these cases subsequently passed out of observation, and no definite results can be stated. The author, however, urges that his partial success renders the method of including a bit of the sclera with the transplanted piece a prerequisite of success. The method whereby this opaque part subsequently becomes transparent by a spontaneous process is hard to believe. It is evident that the success of the endeavors must depend upon a more perfect technique. Personal disappointments and the scepticism of others have not discouraged v. Hippel, who recently successfully ingrafted a rabbit's cornea (4 mm.) in the opaque cornea of a girl seventeen years old.

The visual acuity at the end of eight days was $\frac{20}{CC}$. The investigations of

Leber upon the liquid changes of the eye have taught us that the transparency of corneal tissue is only protected by the intact state of Descemet's membrane, hence the transplantation is made possible, only if the endothelium of this membrane preserves its integrity. If the membrane is wounded it rolls upon itself, and failure is the result. The method, which is difficult and delicate, is applicable only to non-adherent leucomas, according to von Hippel.

INFLAMMATION OF THE LACHRYMAL CANAL.

DR. MONTANELLI (*Bolletino d'Oculistica*) reports that two cases of dacryocystitis, which proved rebellious to the usual line of treatment, responded promptly to the daily irrigation of the canal of a solution of boracic acid (40 in 1000) with one gramme of salicylic acid. The injections were made with a perforated nozzle introduced in the upper lachrymal duct, and this probe attached to a rubber tube terminating in a reservoir placed 90 centimetres above the level of the eye.

OCULAR INJURIES CAUSED BY THE OBSTETRIC FORCEPS.

BERGER (*Archives für Augenheilkunde*, March, 1887) reports a case of ocular injury caused by obstetrical forceps, which, from its rarity, attracts attention. The levator palpebræ was so injured that the child (of four years) suffered with marked ptosis, and an almost complete lack of power of the rectus superior. Fundus oculi was normal, the refraction hyperopic and astigmatic, vision

$\frac{20}{XXX}$. Three other cases of ocular injuries by forceps are all that are recorded in ophthalmic literature. These are by Steinheim, in the *Deutsche medizinische Wochenschrift*, 1883, No. 17.

INCISION OF SWOLLEN OPTIC NERVE SHEATH, AND ETIOLOGY OF
"CHOKED DISK."

MR. BRUDENELL CARTER (*Lancet*, March 26, 1887) reported to the Medical Society of London an interesting and successful instance of incision of the nerve sheath, and escape of the contained fluid, in a case of swollen optic disk. Under iodides and mercury no improvement had taken place, but the symptoms rapidly grew worse. Vision was already seriously threatened. The operation was preceded by a division of the external rectus, and the sheath of the optic nerve was exposed by rotating the eye inward, and the incision made. There was immediate relief from headache. In ten days the swelling of the optic disk had become reduced by one-half, and the recovery was uninterrupted.

The case, he thought, goes far to prove that the pathology of swollen optic disk is primarily dropsical, and only secondarily neuritic. Dr. Carter argued that there was a descent of fluid from the subarachnoid space to the space between the dural and pial sheaths of the optic nerve, and from this cause resulted compression of the nerve, and impeded venous circulation.

Readers interested in this question of the etiology of optic neuritis, will find a thorough *résumé* of Deutschman's researches and experiments in relation thereto in the *Ophthalmic Review* for April, 1887. Deutschman makes it clear that the so-called choked disk is not pathologically distinct from other forms of papillitis, and that the inflammatory process in the nerve is generally an ascending, rather than a descending one. The conclusion reached is that papillitis does not depend upon pressure, but results from an irritating fluid passing from the cranial cavity, and arrested at the bulbar end of the optic nerve, producing there an infective action. This conclusion would, therefore, as necessarily demand the surgical procedure above described, as if pressure, instead of being only a subsidiary cause, were in fact the sole cause. In cases, therefore, when loss of vision is threatened from papillitis of any kind, the indication points to immediate incision of the optic nerve sheath and drainage of the dammed-up retrobulbar infecting fluid.

OPHTHALMIA NEONATORUM.

The fifth of DR. C. BELL TAYLOR'S clinical lectures on diseases of the eye (*Lancet*, April 16, 1887) is devoted to ophthalmia neonatorum, and is a succinct account of the fearful consequences of the common neglect of obstetricians to give but an instant's attention to a simple prophylactic measure.

Of 630 cases treated in the early stages by Professors Horner, Schweigger, and Hirschberg, every one recovered with absolutely perfect sight, whilst of 120 cases treated by the same physicians, but only in the later stages, 49 became wholly blind. Of the 300,000 blind people in Europe, from one-third to one-half are so from simple neglect of an absolutely certain and well-known precaution.

Credé's method—a two per cent. solution of nitrate of silver dropped into the eyes of all newborn infants—should be a public law, neglect of which should debar a physician or midwife for all time. It is an old warning, but it is one that ignored daily produces such a stupendous amount of misery that it seems always *à propos* again to call attention to it.